

REMARKS

Claims 1-24 are pending in the present application. Claims 1, 5, 6, 12, 17, and 18 are amended. Claims 23 and 24 are new. Claims 1 and 12 are independent.

Applicants respectfully submit that the amendments to independent claims 1 and 12 are not narrowing. It is further submitted that the amendments were not made for a reason relating to patentability. Applicants submit that, in fact, claims 1 and 12 have been amended to broaden the scope of the claimed invention. Accordingly, it is submitted that these amendments do not give rise to estoppel and, in future analysis, claims 1 and 12 are entitled to their full range of equivalents.

Rejections under 35 USC §103(a)

Claims 1-4, 6, 8-16, 18, and 20-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,595,435 to Palmer et al. (hereinafter Palmer) in view of U.S. Patent No. 6,007,218 to German et al. (hereinafter German) and U.S. Patent No. 5,870,215 to Milano et al. (hereinafter Milano). This rejection is respectfully traversed.

Independent claims 1 and 12 each recites a light assembly including a light-emitting diode disposed at a thermally conductive housing base. It is

apparent that the Examiner applies Palmer as the primary reference in this rejection. While the Examiner relies on Palmer to teach a light emitting diode, the Examiner admits that Palmer fails to disclose a thermally conductive housing. See Office Action at page 2.

Thus, the Examiner imports the teachings of German to remedy this deficiency. Applicant respectfully submits that the Examiner's proposed combination of Palmer and German is improper and, thus, the Examiner has failed to establish a *prima facie* case of obviousness.

Palmer discloses an infrared (IR) flashlight using a low-wattage (and relatively inexpensive) IR light-emitting diode (LED) 24. See Palmer at Fig. 2A and column 3: lines 26-40. Particularly, Palmer discloses that this LED is plugged into socket 22, and thereby connected to battery housing 12. Light is emitted from Palmer's IR LED directly through a focusing lens 94. Palmer further teaches that a sliding zoom lens assembly 26 adjusts the distance between the IR LED and the focusing lens to provide a continuously variable beam diameter (see Palmer at column 3: lines 6-12).

Applicant respectfully submits that German's device operates according to completely different principles than Palmer's.

In particular, German is directed to a laser security device that generates a visible laser beam intended to create temporary visual impairment to a potential adversary while maintaining and intensity and wavelength which does

not cause permanent eye damage. In order to ensure that the intensity and the wavelength of the laser are safe, German discloses intricate electronic control means 41 for controlling the source (laser diode 48).

In particular, German discloses that the electronic control means may include a photodiode (to sense the optical power from the laser), a high resistance thermistor (to sense the laser diode temperature) and a control device 35. Because all of the electronic circuits in the electronic control means and laser diode package generates a significant amount of heat, German discloses that the electronic control means and laser diode are inserted in a copper shell 47. German further teaches filling the shell with a heat-conducting epoxy material. According to German, the shell and epoxy material act as an efficient heat sink to dissipate the high amount of heat from the electronic control means 41.

Applicant respectfully submits that there is no motivation to incorporate German's heat sink structure (i.e., copper shell and epoxy material) in Palmer's device. Specifically, German only suggests that his heat sink is necessary for the elaborate control circuitry, which is needed for regulating the intensity and wavelength of German's laser to cause temporary visual impairment, but no permanent injury. There is no suggestion that Palmer requires any such control circuitry in his disclosed application.

Applicant respectfully submits that it is clear from Palmer's disclosure that a relatively small, low-power IR diode is used. Applicant further submits that the light source light source in Palmer draws on the order of 20 milliamps and, thus would not generate enough heat to require the heat sink structure disclosed by German.

In the Office Action, the Examiner asserts that it would have been obvious to incorporate German's aluminum outer casing in Palmer's device "due to its strength, durability, shock resistivity and resistance to environmental hazards" (Office Action at page 3). Assuming for the sake of argument that the Examiner's assertion is true, Applicant respectfully submits that this modification of Palmer does not teach or suggest a thermally conductive base at which an IR light emitting diode is disposed, as required by independent claims 1 and 12. Neither Palmer nor German discloses that the light source is disposed at any portion of the outer casing. See, e.g., Palmer at Fig. 2A; German at Fig. 4A.

Furthermore, Applicant submits that there is no teaching or suggestion in Milano that remedies the above-mentioned deficiencies in the Examiner's proposed combination of Palmer and German. The Examiner makes no assertion in the Office Action that Milano provides any teaching or suggestion of a heat conductive base.

Accordingly, Applicant respectfully submits that independent claims 1 and 12 are allowable over the combination of Palmer, German, and Milano at least for the reasons set forth above. Further, Applicants submit that dependent claims 2-4, 6, 8-11, 13-16, 18, and 20-22 are allowable over Palmer, German, and Milano at least by virtue of their dependency on claims 1 and 12. Thus, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1-4, 6, and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,707,555 to Meyers (hereinafter Meyers). This rejection is respectfully traversed.

As to independent claim 1, the Examiner admits that Meyers fails to disclose a thermally conductive base. The Examiner imports the teachings of German to remedy this deficiency. Although it is apparent that Meyers is the primary reference in this rejection, the Examiner relies on German to teach a light emitting means adapted to emit IR light through a hollow of the housing to a collimating lens (see Office Action at page 7).

Independent claim 1 recites a light emitting diode disposed at a thermally conductive base, which is adapted to emit IR light through a hollow to a collimating lens. Applicant submits that this feature is not taught nor suggested by the proposed combination of Meyers and German.

Meyers discloses a diode 30 that emits IR light through an optical system in the tubular housing 20, which includes a meniscus lens 36, before reaching the periscopic lens 34 (interpreted by the Examiner as a collimating lens). It is apparent from the Office Action that the Examiner realizes that Meyers' diode does not emit light through a hollow to the periscopic lens.

However, Applicant respectfully submits that German also fails to disclose a diode, which emits light through a hollow to a collimating lens. Rather, German expressly discloses a laser diode 38 that transmits light through a fiber optic cable 33. The light is then transmitted from German's fiber optic cable toward collimating lens 22. See German at column 6: line 66 - column 7: line 15 and Fig. 4a.

Thus, it is respectfully submitted that none of Meyers and German, either taken separately or in combination with one another, discloses a diode that emits light through a hollow to a collimating lens. Applicant respectfully submits that this claimed feature, which is not taught by the prior art, is advantageous because it allows the claimed light assembly to have compact dimensions. For example, the light assembly of the present invention can be embodied in a length of 2 inches and a diameter of 1.75 inches. Conversely, the optical system disclosed by Meyers requires a housing that measures about 10 inches in length (see Meyers at column 3: lines 29-31), while German's device

must be configured to house a fiber optic cable whose length is 70 centimeters (see German at Column 8: lines 10).

In addition, Applicant respectfully submits that the Examiner's proposed modification of Meyers to incorporate the aluminum outer casing of German does not disclose a thermally conductive base at which a light emitting diode is disclosed. Meyers' diode is not disposed at any portion of the outer casing (tubular body 20). Accordingly, incorporating aluminum into the outer casing of Meyers would not result in Meyers' diode being disposed at a thermally conductive base.

Applicant respectfully submits that claim 1 is allowable over the proposed combination of Meyers and German at least for the reasons set forth above. Furthermore, it is respectfully submitted that claims 2-4, 6, and 7 are allowable over Palmer and German at least by virtue of their dependency on claim 1. Thus, reconsideration and withdrawal of the rejection is respectfully requested.

Claims 5, 10, and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyers in view of German, and further in view of U.S. Patent No. 4,738,534 to Houseman et al. (hereinafter Houseman). Applicant respectfully submits that Houseman fails to remedy the deficiencies set forth above in connection with independent claim 1. Accordingly, Applicant

respectfully submits that claims 5, 10, and 11 are allowable at least by virtue of their dependency on claim 1.

Claims 8, 12-16, and 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyer in view of German, and further in view of U.S. Patent No. 5,763,882 to Klapper et al. (hereinafter Klapper). Applicant respectfully submits that Klapper fails to remedy the deficiencies of Meyers and German set forth above in connection with independent claim 1. Since independent claim 12, similarly to claim 1, recites an IR light emitting diode disposed at a thermally conductive base, and configured to emit light through a hollow to a collimating lens Applicant submits that claim 12 is allowable over the combination of Meyers, German, and Klapper. Further, it is respectfully submitted that claims 8, 11-16, and 18-20 are allowable at least by virtue of their dependency on independent claims 1 and 12.

Claims 17, 21, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyers in view of German, and further in view of Houseman and Klapper. Since neither Klapper nor Houseman remedy the deficiencies of Meyers and German in connection with independent claim 12, Applicant respectfully submitted that claim 17, 21, and 22 are allowable at least by virtue of their dependency on claim 12.

For the reasons discussed above, the Examiner is respectfully requested to reconsider and withdraw all of the outstanding Section 103 rejections.

Conclusion

In view of the above remarks, it is believed that all of the outstanding rejections have been properly traversed in the present application. Accordingly, Applicant earnestly seeks a Notice of Allowance in connection with all of the pending claims.

Should the Examiner believe that any outstanding matters remain in the present application, the Examiner is encouraged to contact Jason Rhodes (Reg. No. 47,305) at the telephone number of the undersigned in order to conduct an interview in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to debit Deposit Account No. 02-2448 for any additional fee required under 37 C.F.R. §1.16 or §1.17, particularly extension of time fees, or to credit said Deposit Account for any overpayment of fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

D. Richard Anderson
Reg. No. 40,439

2929-228P
DRA:JWR:kpc

gr

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000